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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/074,937 | 02/12/2002 | Yiping Zhao | RPI-112US | 6992 |

7590 08/27/2003

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EXAMINER

PAK, SUNG H

| | |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

2874

DATE MAILED: 08/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

AD

Office Action Summary

Applicati n No.

10/074,937

Applicant(s)

ZHAO ET AL.

Examiner

Sung H. Pak

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-- Th MAILING DATE of this c mmunicati n appears on the cover she t with the c rresp ndenc address --
Period f r Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 13-19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-12 and 20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4,5.

- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-12, 20, drawn to an optical device, classified in class 385, subclass 16.
- II. Claims 13-19, drawn to a process for preparing carbon nanotube switch, classified in class 524, subclass 495.

The inventions are distinct, each from the other because of the following reasons:

Inventions group II and group I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product as claimed can be made by another and materially difference process, such as chemical deposition of carbon nanotube material on a substrate, etc.

Because these inventions are distinct for the reasons given above and the search required for Group II is not required for Group I, restriction for examination purposes as indicated is proper.

During a telephone conversation with Kevin Casey on 8/13/2003 a provisional election was made without traverse to prosecute the invention of group I, claims 1-12,

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and 20. Affirmation of this election must be made by applicant in replying to this Office action. Claims 13-19 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Information Disclosure Statement

All references submitted in the information disclosure statement have been considered by the examiner.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 3-6, 8-11, 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Bernstein (US 2002/0171901 A1).

Bernstein reference discloses a non-linear optical switch with all the limitations set forth in the claims, including: a substrate (Fig. 1A); a material disposed on the substrate, the material including a plurality of carbon nanotubes and a polymer, wherein the polymer is polyimide (paragraph 0030- 0032); the material being an optically transparent coating (paragraph 0032).

Claims 1-4, 6-12, 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Smalley et al (US 2002/0068170 A1).

Smalley et al reference discloses an optical device with all the limitations set forth in the claims, including: a non-linear optical switching device (paragraph 0024); a material of the switching device including a plurality of carbon nanotubes and polymer composite (paragraph 0011, 0041). Although Smalley et al reference does not explicitly disclose that the switching device uses the material disposed on a substrate, the use of a substrate in optical switching device is common and inherently disclosed by the Smalley et al reference.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Majumdar et al (US 2002/0175408 A1), Bao et al (US 2003/0133637 A1), and Pelrine et al (US 2002/0050769 A1) disclose the use of carbon nanotubes in optical switching devices.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sung H. Pak whose telephone number is (703) 308-4880. The examiner can normally be reached on Monday - Thursday : 6:30am-5:00pm.

The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



Sung H. Pak
Examiner
Art Unit 2874

sp



Brian Healy
Primary Examiner